AFTERWORD

I can usually solve random cube problems by using this solution with the simpler short cuts provided in about 2½ minutes. I find a considerable amount of time is spent in locating cubes and aligning the faces so that the next move can be made. The stiffness of the cube is a decisive factor in time trials.

As was pointed out in the Introduction, this solution does not involve the fewest number of moves possible. Nevertheless, by using all the moves provided, including the "expert" short cuts, I can average less than 100 moves for solution of a random cube problem, although occasionally more than 100 moves are required. To achieve this reduction, I have to combine steps 2 and 3, but the other steps remain the same. There is nothing sacred about breaking up the solution into these 5 steps, and a better solution may well use a different method.

An interesting pastime (or obsession) is to try to find better solutions for this fascinating puzzle. It is actually possible to rationally design sequences of moves that have desired overall effects. Try the sequence:

   (L- R+) F2 (L+ R-) B2

This takes the cube that starts out in the FT position to the BP position, the cube in BP to BF, and the cube in BF to FT. It is best to try this on a solved cube to see the overall effect. Now, on a solved cube, do the following 2-move sequence.

   R2 T+

This has the effect of taking a cube from BR to FT. Now, on the same cube, do the sequence:

   (L- R+) F2 (L+ R-) B2

This is the same as the one given above. Then "undo" the first 2 moves:

   T- R2

The overall effect is BP to BF to BR to BP. By preceding the 6-move sequence with various moves and following it with the exact reverse of those moves, you can choose to exchange any 3 edge cubes without disturbing the other 9 edge cubes and all 8 corner cubes. Using tricks like this, it is possible to move the cubes around almost at will.

A real challenge is to develop a shorter solution that is also clear, simple, and error tolerant.

Happy cubing!